

Heart disease, high blood pressure and diabetes may combine to worsen thinking skills

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Credit: University of Glasgow

Research from the University of Glasgow shows that people who have a cardiometabolic disease, such as high blood pressure, diabetes or coronary heart disease (CHD), perform worse on mental tests of reasoning, memory and reaction time, and having more than one of these conditions has an even greater effect.

The study, published today in the *European Heart Journal*, and led by researchers from the University's Institute of Health and Wellbeing, suggests that preventing or delaying cardiovascular disease or diabetes may delay [cognitive decline](#) and possible dementia.

This is significant because there are a rising number of people surviving with CHD and, as obesity levels continue to rise, more people are also developing and living longer with diabetes. A decline in thinking skills ('cognitive abilities') can be an important precursor to subsequent [mild cognitive impairment](#) or even dementia into older age.

While previous research has made the link between [cardiometabolic diseases](#) and worse cognitive abilities, the additive effect on cognitive skills of having more than one of these diseases has not been known until now.

The researchers studied nearly half a million participants from the UK Biobank, from data taken between 2006 and 2010. Participants' data was divided by medical history and the number of cardiometabolic diseases they had, and scores on tests of reasoning, [reaction time](#) and memory were then compared.

Dr. Donald Lyall, from the Institute of Health and Wellbeing, University of Glasgow, said: "Having one disease was associated with poorer performance on all the cognitive tests; but having two diseases was worse and three worse still, particularly for reaction times and reasoning.

"Importantly our analysis took account of lots of things which might have resulted in an erroneous result; such as medication usage, gender, age, deprivation, education levels, depression, smoking history, alcohol intake, and obesity."

Dr Lyall added: "Our findings highlight the potential to protect against cognitive decline by addressing other conditions such as heart disease."

"The reduction in mental test scores was relatively small for individuals, but may expand as people age."

"Given rising levels of multi-morbidity, i.e. where people are living with more than one chronic disease, and public health concerns regarding cognitive decline, our work has important implications for future research in this important area."

More information: Donald M. Lyall et al.
Associations between single and multiple
cardiometabolic diseases and cognitive abilities in
474 129 UK Biobank participants, *European Heart
Journal* (2016). [DOI: 10.1093/eurheartj/ehw528](https://doi.org/10.1093/eurheartj/ehw528)

Provided by University of Glasgow

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